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## SOME EXPLANATIONS RELATING TO THE "THEORY OF DYNAMIC ECONOMICS."

THE progress of political economy has involved a shifting of the point of view of economic writers and the grouping of the doctrines of the science about new centres. Ideas, also, which at first are introduced as isolated phenomena out of any direct relation to the main body of economic theory, gradually assume a more important place, and finally become the basis of the greater part of economic reasoning. Of this change of which I speak, probably the doctrine of utility is the best example. It was first introduced in a casual way to illustrate the definition of value. Even in the writings of Mill it was not vitally connected with his system of political economy, although it was made the basis of his theory of morals.

The recent works of Jevons, Menger, and their many followers, have at length given the principle of utility a fundamental place in the theory of value. These writers have also reconstructed the theory of distribution, and in this way the greater part of deductive political economy is based upon or grouped around this one thought. In the *Theory of Dynamic Economics* I have tried to develop a theory of prosperity, putting the doctrine of utility at its basis. The older economic writers deal mainly with the theory of prosperity, and it is only since the time of Ricardo that the theories of distribution and value have assumed a dominant place in economic speculation. As a result of this transfer of interest from one portion of the science to another, great confusion has arisen both in ideas and nomenclature. As has often been pointed out, economics is very defective in the terms which express the leading ideas of the science. These terms are drawn necessarily from popular usage, have many meanings, and are too few in number to express properly all the shades of meaning which an economist desires to emphasize. The terms, therefore, which were used by the earlier writers in the theory of prosperity have been used with other meanings by later writers in the theories of value and distribution.

In an attempt to revive the interest in the theory of prosperity, I naturally used many words according to the manner of the earlier writers, and sought to introduce some new distinctions which seemed necessary in putting the principle of utility at the basis of the theory of prosperity. There is, therefore, need of great care in reading my book to keep in mind the meaning which is given to words, and to contrast consciously the theory of prosperity and that of value. Professor Clark has done this in an admirable way in his review of my book,\* but as much can hardly be said of the review by Professor Hadley.† The latter has assumed that the only proper use of terms is that to which he is accustomed in the discussion of the theory of value; and, by neglecting the careful explanation of the use of words which I have given in my book, he is able to make it appear that my analysis is confused and my reasoning erroneous. As other readers may judge my book from a similar standpoint or be influenced by his opinions, I desire to explain anew the ideas he has misunderstood.

Professor Hadley compares my analysis of the psychological motives in the act of production with that of Jevons, and asserts that my analysis lacks the rigidity of reasoning which is so admirable in the case of Jevons. The analysis is, however, quite similar, differing only in the fact that I appeal to more psychical elements than Jevons does. We both assume that, with the increase in the quantity produced by a workman, the marginal utility decreases and the marginal cost increases. Jevons assumes that the workman will cease production when the marginal utility equals the marginal cost. I assume that the workman, in a favorable environment, will not work so long, but will cease to produce while the marginal increment of production yet yields a surplus in consumption. I shall not try to prove my conclusion; but it plainly rests upon certain psychical phenomena which do not affect the rigidity of my reasoning, if my assumptions are facts. The theory of the relation of cost to value must then be reconstructed to correspond to the new data, and the subsequent reasoning modified in a similar manner.

\* *Annals of the American Academy of Political and Social Science*, July, 1892.

† *Political Science Quarterly*, September, 1892.

There is in this analysis no comparison of the pleasures and pains of one man with those of another man.\* The subject of my analysis is isolated to the same degree that Jevons isolates the subject of his analysis. Such analysis of the motives of the individual I hold, with Jevons and with Professor Hadley, to be essential, and claim that I have fulfilled the conditions.

When, however, we have analyzed the motives of the isolated producer, he must be placed in a social environment, and the modifications which arise from these new conditions must be considered. And here, again, I claim that my reasoning is similar to that of Jevons.† He does not contend, for example, that there never are in the same market two prices. He uses the law of indifference to help himself out.‡ This law, when expressed in its broadest terms, claims that an economist can overlook phenomena that in no way affect the conclusions he desires to draw. With proper explanations, Jevons thinks that it may be claimed that there is only one price in the same market; yet, in proving this law, the defective credit of purchasers, and their imperfect knowledge of the market, are consciously overlooked. Professor Hadley could with equal force have asserted that Jevons's assumption was "a palpable mistake" as to say this of my assumption. The real question is not, Do my assumptions differ from those of Jevons? but Do I draw conclusions that would be vitiated by the fact that the pleasures and pains of individuals differ?

This question can only be decided by a detailed investigation of my book. In explaining the first diagram (page 70), I call attention to the fact that no attempt is made to determine the exact amount of pain that the production of each increment demands, and that the lines measuring it are placed where they are merely for the sake of simplicity. It is, therefore, not the equality of the pleasures and pains of different persons that I assume, but that these facts are of no importance in my reasoning. I try to represent the effects of progress upon the utilities and pains of the members of a society, and my real assumption is that the changes in these quantities are all in the same direction. For example, an improvement in farm ma-

\* See *Dynamic Economics*, Figure I. on page 70.

† *Ibid.*, Figure II. on page 72.

‡ See Jevons's *Political Economy*, page 99.

chinery would affect the subjective costs of all farmers in the same way. Not that every farmer before the improvement had the same costs, nor even that the improvement reduced the efforts of all farmers to a like degree, but that every farmer's costs would be less than before, and hence the lines measuring the costs should be differently located under the new than under the old conditions. So, also, with the increase of utility due to improvements in consumption. The introduction of sugar, for example, will add something to the utility of each individual; and hence the lines measuring the surplus of utility must be differently drawn, even though the additions to the utility of different individuals are not the same.

The claim that consumer's surplus and differential gains decrease relatively with social progress does not assume that they decrease to each individual in a like degree, nor does the law that total subjective value in a dynamic society approximates more closely to the total utility of commodities demand this assumption for its proof. These laws merely represent tendencies and assume the indifference of extraneous facts.

There are, then, two distinct kinds of analysis which must be consciously contrasted. When we consider the pleasures and pains of an isolated man, the quantities of which we treat are positive, and the comparisons direct. When, however, we pass from the economy of the isolated man to that of a group of men in social relations, the quantities are relative, and our comparisons are between the pleasures and pains of such a society at different stages of its progress. The diagrams illustrating this class of problems merely show the effects of a group of tendencies which act on all individuals in the same way, but to unlike degrees.

Professor Hadley is also mistaken as to the comparisons which Jevons makes of the pleasures and pains of different individuals. That the reasoning and premises of Jevons are similar to mine is shown in many places, of which I shall give a few examples. In reference to Figure VII., on page 156 of his *Political Economy*, he says: "Let the wool of Australia be represented by the line  $o b$ , and its total utility to Australia by the area of the curvilinear figure  $o b r p$ . Let the utility of a second commodity, say cotton goods, to Australia be similarly

represented in the lower curve, so that the quantity of commodity measured by  $o^1 b^1$  gives a total utility represented by the figures  $o^1 p' r^1 b^1$ ."

In these sentences, and in the subsequent reasoning, the utilities of articles to different persons are compared and the relative utility of each increment fixed. The utility of the whole supply of wool to Australia is regarded as a definite quantity which can be represented in a figure. It is not assumed that the different increments of wool have the same utility to all Australians, but it is assumed that the utility of these increments to different persons has a common standard through which they can be measured and compared. The figure used by Jevons does not differ in kind from the figures that I use; nor do I use any assumptions which he does not need. The only difference is that my figures represent the utility of the whole produce of a nation, while his figure includes only the utility of single articles.

In comparing the sacrifices of different individuals, Jevons goes even farther than I do. On page 234 he says, "I shall suppose that a certain laborer *or, what comes to exactly the same thing*, a body of laborers, expend labor on several different pieces of ground." The italics are mine, and they show that Jevons assumed that the sacrifices of different individuals could be directly measured. On the next page (235) Jevons uses even stronger language. He says, "We may say, then, that, whenever a laborer or a body of laborers distribute their labor over pieces of land with perfect economy, the *final ratios of produce to labor will be equal*." The italics are Jevons's in this case, and show that he did not hesitate to overlook the subjective differences in men when economic theorems were involved, the truth of which did not depend upon such differences. If further proof of the way Jevons reasoned is needed, I refer the reader to page 97 of his book, where he discusses what he calls the "Fictitious Mean." His opening sentence is, "It should be remarked, however, that the economical laws representing the conduct of large aggregates of individuals will never represent exactly the conduct of any one individual."

The assertion that I, misusing the term "subjective value,"

regard subjective and objective values as quantities of the same general sort, demands an explanation of these terms before a refutation of the charge is possible. We owe to the Austrian economists the term "subjective value"; and yet I think they employ the word in a wrong sense, making it, by their usage, really a species of objective values. To clear up a confusion which lies in the discussion of value, I have drawn the distinction between positive and absolute utilities. Positive utilities are the units of satisfaction we derive from articles of consumption. Subjective value, as I use the term, is always measured in terms of positive utilities. I define subjective value, in a positive way, as the quantity of pleasure we derive from an article; while the Austrians define it, in a negative way, as the utility we lose if we are deprived of an article. If different series of satisfactions did not depend upon one another, this distinction would be of no importance; but, since we often find that the loss of one element in one series of satisfactions deprives us of the pleasure of several different groups of articles, the distinction implied in defining utility in a positive or negative way becomes of fundamental importance, and places a large number of values the Austrians have termed subjective in the class of objective values. In short, we lose the possibility of rigid analysis if the distinction is neglected.

Suppose I ascend a mountain, and desire food and shelter for the night, so as to enjoy the sunrise. The landlord demands ten dollars for these accommodations. I can return to the valley, and get food and shelter at a reasonable price; but I should thereby lose the pleasure of the sunrise at the summit. What, under these circumstances, fixes the price of the food and shelter on the mountain? Is it the subjective satisfaction I get from these commodities, or the objective relation between them and the sunrise I hope to enjoy? If it is the latter, then the value in question is objective, and not subjective. The increased price which the hotel-keeper demands is not compensated on my part by any increase of utility. It results merely in a transfer of a sum of utilities, which otherwise would be mine to enjoy, into the possession of the hotel-keeper. The theory of subjective values includes only problems relating to the increase and decrease of utilities. All problems relating to

the transfer of utilities from one person to another are in the domain of objective values. A transfer of utilities indicates a change in objective values, while an increase or decrease of utilities affects subjective values.

Subjective values, in the sense that the Austrians use the term, determine *market* values. In the sense, however, in which I use the term, subjective value determines the *normal* objective value of commodities.\* Normal objective values tend to be proportional to the positive utility of the marginal increments of commodities. The field in which the Austrian economists are working is therefore different from the field in which I am interested. Using the term "subjective" in the way I do, several important relations become clearly defined which are obscured by the Austrian nomenclature. Perhaps these distinctions are of no importance in the consideration of objective values, but they are of prime importance in any attempt to measure the relative prosperity of a society at different stages of its progress.

The use of similar terms with different meanings is, perhaps, an excuse for confusing my ideas with those of the Austrian economists; but it gives no ground for the assertion that I use subjective and objective values interchangeably, and combine the two in one diagram. There is no diagram in which the two are combined, nor are the terms ever used in the same sense.† Subjective values rise and fall, while objective values are not sums, but merely ratios. Changes in objective values indicate a shifting of utilities from one person to another, while changes in subjective values indicate a better or worse condition of society. Every change in subjective values affects the objective values of commodities, some rising, while others fall. There is an increased demand for all articles; but, as some articles follow a law of increasing return, others a law of constant return, and still others a law of decreasing return, the change in subjective value alters the relation of marginal subjective cost to marginal utility to a different degree with each class of commodities; and hence there must be a shifting of objective values to create anew an equilibrium

\* *Dynamic Economics*, page 65.

† See *Dynamic Economics*, page 64 and also the note on page 72.



between marginal cost and marginal utility. A change in subjective values may also affect favorably or unfavorably the possibility of the monopoly of particular commodities, and thus creates new causes for changes in objective values. Changes in objective values, however, seldom affect subjective values: they merely shift from one class of persons to other classes utilities already created by other forces.

It is not out of place in this connection to explain more fully the point where the change should be made from subjective to objective values. Subjective value relates primarily to present goods. It is the satisfaction we get from the marginal increment of any commodity we consume. We attribute or impute to future goods in the final stage of their production a subjective value equal to the marginal increment of the present goods we make from them. Future goods have no consumer's surplus. Each increment of wheat made into bread has the same subjective value. Individuals produce future goods, and exchange them with society for present goods. These future goods have a subjective value in the exchange equal to the marginal utility of the present goods produced from them.\*

Producers, therefore, get for their future goods (including the interest for waiting) a sum equal to the subjective value of all present goods. Consumers get free only the sum of the consumer's surplus. This sum only appears when the present goods get into the hands of the final consumer. Producers cannot get this part of the surplus without arbitrary prices. All other parts of the surplus fall into their possession, because the imputed value of the future goods they produce equals the subjective value of the present goods made from future goods.

Whenever there is a rise in the subjective value of present goods, the imputed value of future goods rises to a like amount. The rise in the subjective value of future goods is not equal, because producers are compelled to impute the

\*In explaining this statement, it should be kept in mind that goods continue future goods until they are handed over to the final consumer. Saving is a productive act, the reward for which is an element in the subjective value of future goods in their final form just before they become present goods to their ultimate consumers.

greater part of the added utility to the rarer articles whose rate of increase is the slowest. The ratios of exchange of these future goods will change to the advantage of the more slowly increasing factors of production. The difference, therefore, between subjective costs and the subjective values of future goods are appropriated by producers as a class; but the distribution of this fund of surplus value (the difference between marginal cost and subjective value) is a problem of objective values. We must know the ratio in which commodities exchange before the shares in the surplus value of the different producers can be determined. In this manner we can delay for a long time the passage from the consideration of subjective to objective values; but in the end it must be done, or some of the problems of distribution will remain unsettled.

The validity of the claim that I combine subjective and objective values in one diagram depends upon the definition of the word "rent." Professor Hadley says that "rent is the excess of price over cost." I am surprised that he should base so important an argument on such a definition. He cannot but be aware that every leading economist from Ricardo to Jevons has defined rent in another way. "Rent," says Ricardo, in his well-known definition, "is the portion of the produce of the earth paid to the landlord." Rent from this standpoint is a part of the produce of the land, and not the price of produce. All proofs of the Ricardian theory of rent use the word in this way. It is of course true that these writers often use the word as an elliptical expression for money rents, but such a usage cannot be made a justification for an exclusive use of the word in the latter sense. If rent is produce, the satisfactions derived from wheat or potatoes are of the same nature as the satisfactions derived from cloth or books or furniture, and can be combined in one diagram with them without error.

The diagram in question represents in a simple form the facts upon which theories of the distribution of wealth are based. Most theories of distribution do not have the shares of the different factors measured in quantities of the same kind. Rent may be measured in produce, wages in money, interest in a rate per cent., and profits in future goods. Through this

lack of co-ordination of the parts there is unnecessary duplication, and parts of the produce of industry may not be accounted for or may be given away twice.

To avoid these evils, I measure every part in present satisfactions. The whole annual produce of the nation, the present goods fit for consumption, is the fund to be divided. Every factor has its share measured in these present goods and the satisfactions they afford.

In yet another way my theory differs from other theories of distribution. They suppose that there is a single law that controls the share of each factor. They have, therefore, a law of rent, of wages, of interest, and of profits, and assume that through these laws all the produce of the nation is distributed. I hold, however, that the annual produce of the nation is composed of several distinct funds, each of which has its own law of growth. These funds are then distributed to the various factors by a series of secondary laws. The surplus of society is not distributed by the same law that regulates the return a producer gets for his costs in aiding production. Rent, wages, interest, and profits are therefore usually complex funds made up of revenue derived from different sources. The problems of distribution thus become more complicated, and demand a more careful analysis of the phenomena involved before a satisfactory solution can be obtained.

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